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Abstract book



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Abstracts & Program

Iris FEICHTINGER, Anna E. WEINMANN & Andrea KRAPP

Wien, September 2025

Programm

- 09:00 Registration
09:30 FEICHTINGER & WEINMANN: Welcome
09:40 MAYS: How to kill almost all (land) life on Earth
10:00 SLODOWNIK: The Austral Antarctic Forest during the Early Eocene Climatic Optimum – biogeography, diversity and the fate of polar lineages
10:20 KUSTATSCHER: Terrestrial floras during the Carnian Pluvial Episode in the Northwestern Tethys
10:40 LUKENEDER: Buch zur Karnischen Krise Österreichs folgt auf UNESCO Geopark Buch
11:00 Coffe break & Poster session

Thenius-Award-Session:

- 11:40 BAUR: New insight into the deep marine elasmobranch diversity of the Central Paratethys Sea during the early Aquitanian of Austria
12:00 MARX: Taxonomy, Taphonomy and Phylogeny of a historical *Stromerius nidensis* Specimen (Cetacea, Basilosauridae) and other Archaeocete Material from the Collection of the NHM Vienna
12:20 MASCARENHAS: The NHM Vienna sabre-toothed cat *Smilodon populator*: A new body mass estimate using digital reconstruction and computational analysis methods
12:40 REICHENBERG: Palaeoecology of the Miocene fish fauna of St. Margarethen, Austria
13:00 Lunch break
14:00 ARRIGONI: Natural climate variability or ecological tipping point? Multi-proxy study on the southwestern Australian margin across the “900 kyr Event” Yen-Mariani-Award
14:20 SCHWAB: From Land to Water: Evolution of Form and Function in Aquatic Carnivores
14:40 KOUKAL: Rhino-plasty – a Pleistocene Ice Age Makeover
15:00 WIEDER: „Über die Bande“ – wie Österreichs Paläontologie durch koloniale Herrschaftssysteme profitierte
15:20 Coffee break & Poster session
15:40 WÖGER: Die außergewöhnliche Fossiliensammlung von Herbert Schaffer aus Schloss Würting: Konservierung, Digitalisierung und Bestimmung von Fossilien aus Europa und Nordafrika
16:20 WANZENBÖCK: Fund einer angebissenen Delfinrippe aus den mittelmiozänen Ablagerungen von St. Margarethen, Bgld.
16:40 POLLERSPÖCK: How to use shark-references

17:00 FEICHTINGER: Reconstructing Fish Diversity Across the K–Pg Boundary: Insights from Bulk Sampling in Austria and Bulgaria
17:15 FEICHTINGER & WEINMANN: Closing

Poster

- WEINMANN: Addressing ambiguities in historic foraminifera type collections through digitization
ETZLER: Palaeoparasitological studies of vertebrate coprolites with emphasis on endoparasites of Archelosauria

Natural climate variability or ecological tipping point? Multi-proxy study on the southwestern Australian margin across the “900 kyr Event”

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The “900 kyr event” is a well-established phase of the natural climate variability characterizing the Early Middle Pleistocene Transition (EMPT; ~1.25–0.6 Ma). Nevertheless, our multi-proxy study – which integrates both existing and new high-resolution benthic foraminiferal data from International Ocean Discovery Program (IODP) Site U1460 – provides compelling evidence that this threshold represented an ecological tipping point in its own right, rapidly altering the ecosystem of shallow marine areas. Recognizing past tipping points in the geological record is at present of crucial importance since climate models increasingly integrate tipping elements for future projections. Furthermore, determining the extent and the timing of past changes provides valuable understanding of potential future alterations in vulnerable ecosystems, such as marine continental shelves. Continental shelves are in fact sensitive, yet still relatively underexplored environments which often represent hotspots for marine biodiversity and play a crucial role in supporting commercial fisheries. Given that the consequences of human-induced climate change on the oceans are a primary concern in current debates, our study documents the rapid and lasting response of such a sea-level-sensitive ecosystem to major climatic upheaval. With this research, we also want to highlight the urgent need for further studies to better understand how changes in the global carbon cycle unfold and how they influence, with a cascading effect, the entire food web. Finally, since the natural glacial-interglacial variability, as it established during the EMPT, has already been disrupted by the anthropogenic pressure, we cannot exclude a reversal of the 900 kyr tipping point. This threshold can thus be interpreted as a warning from the past, indicating the potential recurrence of pre-900 kyr event nutrient-limited conditions, which would have highly unpredictable repercussions for marine life.

Contender for the Yen-Mariani Award



New insight into the deep marine elasmobranch diversity of the Central Paratethys Sea during the early Aquitanian of Austria

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The Central Paratethys Sea played a crucial role in fauna accommodation during the Oligocene and Miocene and served as a habitat for various elasmobranchs (e.g., sharks, rays, and skates). However, due to poor preservation conditions, their fossil record remains patchy, even though elasmobranchs were widely spread throughout the Paratethys. Additionally, the deep-marine sediments of the Central Paratethys are rarely accessible, further limiting our knowledge on those marine animals. This study presents data on a recently discovered elasmobranch assemblage from the Upper Egerian (Aquitanian, Ebelsberg Formation), recovered from an outcrop along the Enns River in Lower Austria. These sediments were only temporarily exposed due to a river lowstand caused by maintenance work at a nearby power plant, limiting the time to recover material. However, the recovered material includes at least 10 elasmobranch genera, dominated by deep-dwelling species such as squaliformes. The presence of bottom dwelling taxa (e.g., *Raja*) provides evidence for a habitable deep-marine environmental setting, including oxygen-rich conditions on the sea floor. This study focuses on the systematic palaeontology, as well as the palaeoecology and temporal distribution of selected elasmobranch genera. The different hunting behaviours of the species and the resulting differences in their tooth morphology are indicative of the environmental conditions that prevailed at the time of the Central Paratethys Sea and provide new insight into the trophic structure and diversity of the elasmobranch community during the early Miocene.

Palaeoparasitological studies of vertebrate coprolites with emphasis on endoparasites of Archelosauria

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Parasites and their hosts have always been engaged in dynamic co-evolutionary patterns, characterized by continuous adaptation and counter-adaptation. While many endoparasites can be detected in the faeces of modern vertebrates, fossil coprolites have the potential to provide valuable insights into parasite-host interactions in deep time. The presented project investigates the temporal and taxonomic distribution of fossil endoparasites in coprolites of Archelosauria, a vertebrate clade that has existed since the Triassic, dominated Mesozoic ecosystems, and still persists today. Using coproscopy methods, chemical decomposition, thin-section analysis, and advanced techniques such as SEM-EDX and micro-CT scans, helminth eggs will be identified and classified from coprolites. A particular focus will be placed on the comparative analysis of modern and fossil samples to draw conclusions about food webs, ecological niches, and evolutionary developments. The results aim to expand our understanding of the taxonomic and temporal distribution of palaeoendoparasites, while also refining and improving methodologies for examining fossil coprolites and their producers.

Reconstructing fish diversity across the K–Pg Boundary: Insights from bulk sampling in Austria and Bulgaria

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The end-Cretaceous mass extinction event (~66 Ma), the last of the “Big Five” extinction events, had a profound impact on life on Earth. While the extinction of non-avian dinosaurs on land and giant marine apex predators such as mosasaurs is well documented, the consequences for fish communities remain less well understood. To better assess the impact of this event on actinopterygians (bony fishes) and elasmobranchs (sharks, rays, and skates), high-resolution sampling with a substantial quantity of sediment is essential. In this study, we present and compare results from extensive bulk sampling of two K-Pg boundary successions in Austria (Waidach and Gams) and one section in Bulgaria (Byala). These three sites represent different environmental settings, which are reflected in notable disparities in fossil preservation, species richness, and diversity. The large volume of sediment processed (~4.5 tons) led to the identification and description of several new elasmobranch taxa, emphasizing the scientific value of large-scale bulk sampling in paleoichthyological research. Additionally, we provide background information on the fieldwork itself and highlight the logistical challenges encountered when collecting and processing such large quantities of sediment, which are often underappreciated but critical to the success of studies of this nature.

Rhino-plasty – a Pleistocene Ice Age Makeover

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The Natural History Museum Vienna (NHMW) showcased skeletons of Pleistocene mammals since decades along the stairway of level 1. This exhibition was last adapted by the team of the geological-paleontological preparation and scientists in 2006. During 2024–2025, most of the exhibits were relocated into hall 16 “Ice Age children and their world”, a cooperation of the departments of Prehistory and Geology & Paleontology. The concept of the new permanent exhibition provided the unique chance to remodel several skeletons and items on display, e.g. revise them to the latest scientific findings and give them a modern, appealing look.

The most technical-challenging as well as time-consuming project was the revision of the holotype of the Hundsheim rhino skeleton *Stephanorhinus hundsheimensis*. The rhino skeleton was reassembled in a new posture, therefore, all metal mounts needed to be built from scratch. Because the specimen is displayed free-standing on a platform, requirements include a sturdy mount where all bones are secured, while being reduced and invisible as possible. A lot of the connections were screwed or plugged, because the finished skeleton was too big to be transported and also to facilitate maintenance. For the main rack, 16 mm round steel bars were used, the smaller mounts were formed out of 10–15 mm flat steel. To guarantee a tight fit of the supporting structure, each mount was customized to the individual bone, and most mounts had to be weld in place to the already bolted down rack.

Due to the primary burying conditions of the rhino, its anterior mandible and maxilla are not preserved. Thanks to the inhouse 3D printing lab, we were able to replace the simplified wooden silhouette of the snout used before by 3D filament prints. All bones and the 3D elements were then colorized, the mounts were primed and painted in a hue close to the skeleton. This “nose job” improves the overall look of the exhibit for the public tremendously, giving it a face and last, but not least, enhancing the rhinos instagrammability.

For other items on display, like the Pleistocene cave bears, the cave lion and the saber-toothed cat, the biggest challenge was to change the position of their skull and neck and, therefore, their internal metal support, without disassembling the entire skeleton. The saber-toothed cat *Smilodon populator* skeleton, which was already complemented in former times by modelling compound, was further completed by 3D printed ribs.

This talk will highlight the makeover of the Hundsheim rhino and other exhibits from a preparator's point of view, techniques based on best-practice examples and also some hilarious snafu moments.

Terrestrial floras during the Carnian Pluvial Episode in the Northwestern Tethys

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The Carnian Pluvial Episode (CPE) has been identified as a time of plant radiation and origination of new lineages, likely related to rapid changes from xerophytic to more hygrophytic floras. Increasing humidity, causally resulting from large igneous province volcanism, is considered the likely trigger for the observed changes in terrestrial ecosystems. Understanding the cause and effects of the CPE on the plant realm requires the study of well-preserved floras that are precisely aligned with the CPE. Some of the most iconic Carnian floras are located in the Alps, laying during the CPE in the northwestern margin of the Tethys. This includes the famous Lunz locality (Northern Calcareous Alps) with the so far most diverse and rich plant fossil assemblages, as well as the Raibl plant fossil assemblages (Carnic Alps) and Dibona and Monte Pora (Southern Alps). This climatic episode is also linked to worldwide amber discoveries. Integrated studies of palynomorphs and macro-remains reveal a variety of different plant fossil assemblages from highly diverse ones dominated by ferns and cycadophytes to plant fossil assemblages almost exclusively composed of conifers that show a mixture of predominantly late Palaeozoic (Majonicaceae, Voltziaceae), Mesozoic (Cheirolepidiaceae), and extant (Araucariaceae, Pinaceae, and Podocarpaceae) conifer families.

Buch zur Karnischen Krise Österreichs folgt auf UNESCO Geopark Buch

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Zwei wissenschaftliche und populäre Bücher über geologisch wie paläontologische Highlights der österreichischen Erdgeschichte werden vorgestellt. Faszinierende Einblicke in die Klimageschichte und Fossilwelt der Nördlichen Kalkalpen werden ebenso gegeben wie auch neueste Forschungsergebnisse vorgestellt.

UNESCO Global Geopark Steirische Eisenwurz (2025, *Geoparks im Springer Verlag*): Das Buch zeigt das wunderbare Erdmittelalter in den einstigen Meeresbecken des Natur- und Geoparks Steirische Eisenwurz. Es führt durch gigantische Klimakatastrophen der Erdgeschichte und präsentiert diesen einzigartigen Park als Wunderkammer der Natur. Dieses Buch richtet sich an jeden, der geowissenschaftlich interessiert ist und plant, die einzigartige Geologie der Nördlichen Kalkalpen zu erleben und nimmt Sie mit auf eine erdgeschichtliche Entdeckungsreise im ältesten Geopark Österreichs. Ein spannender Geo-Reiseführer in das Abenteuer „Regionale Geologie“, anschaulich bebildert und leicht zugänglich geschrieben, mit hilfreichen Tipps für jeden Geopark Besucher.

150 years of research of Late Triassic Austrian Konservat-Lagerstätten in the glance of the Carnian Pluvial Episode (2026, *Topics in Geobiology im Springer Verlag*): Gesteine und Fossilien der alpinen Triaszeit sind Zeugen einer der größten Umweltkatastrophen der Erdgeschichte, der „Karnischen Krise“ (Carnian Pluvial Episode). Diese Phase zeichnet sich durch einen Klimawandel vor 233–235 Millionen Jahren aus, der zu einem gigantischen weltweiten Massensterben in den Meeren des Erdmittelalters führte. Das Buch über die Karnische Krise und die Konservat-Lagerstätten der alpinen Trias in Österreich soll dabei Forschung für ein wissenschaftliches Publikum aber auch für ein breites Publikum zugänglich machen sowie Fakten und Daten leicht verständlich aufbereiten.

Taxonomy, taphonomy and phylogeny of a historical *Stromerius nidensis* specimen (Cetacea, Basilosauridae) and other Archaeocete material from the collection of the Natural History Museum Vienna

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The shallow marine fauna of Al-Fayoum in Egypt, dating from the Middle to Late Eocene (41.2–33.9 Ma), has been renowned since the late 19th century for its archaeocete fossils, which have significantly contributed to our understanding of cetacean evolution. The Natural History Museum in Vienna houses a historical convolute of archaeocete material from this location, including two previously unpublished crania.

In this study, one of the crania undergoes a detailed examination. Using measurements and morphological analysis of the bones and teeth, supplemented by μ CT scans, the species and ontogenetic stage of the specimen are identified. Additionally, through comparison of the lithology with various references, the stratigraphic layer of the find is determined with greater precision. The species' characteristics are further explored by comparing it with other basilosaurids, also discussing a possible dimorphism in the tooth size. Furthermore, the bone modifications are analysed for evidence of the cause of death.

The specimen most likely originates from the Upper Eocene Qasr-El-Sagha formation (late Priabonian) and most likely represents the first technically complete cranium of a dentally mature individual of the medium-sized basilosaurid *Stromerius nidensis*. It probably died during a *Basilosaurus isis* attack which followed a typical cetacean hunting pattern, representing the first evidence of *B. isis* occurrence in this temporal and spatial context and extending the prey spectrum of this species to adult cetaceans as well.

Contender for the Thenius Award

The NHM Vienna sabre-toothed cat *Smilodon populator*: A new body mass estimate using digital reconstruction and computational analysis methods

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The sabre-toothed cat *Smilodon* is one of the iconic ice-age animals that inhabited North- and South America. Different species of *Smilodon* of different geographic range existed between the Early Pleistocene and the early Holocene. *Smilodon populator* was the largest species and roamed through the southeastern part of South America between 1 Ma to ca 9000 a BP.

In 1910, the Natural History Museum of Vienna acquired an almost complete skeleton of *Smilodon populator* from Mr. Sofonias Krucsék, a headmaster in Mercedes (Argentina), who had excavated the specimen at the scarp of the Areco River (Río Areco, Province Buenos Aires, Argentina) in late Pleistocene deposits of the Lujanian part of the Pampa Formation. The skeleton is exceptional in showing a series of bone pathologies in different skeletal parts, including a serious but healed femur fracture. Recently, a new body mass estimate for the Vienna skeleton was calculated using volumetric convex hull methods incorporating digital reconstruction of soft tissue and appendicular muscle groups. The resultant body mass estimates of 112–140 kg for a traditional convex hull and 179–225 kg for a musculoskeletal model fell within the lower range of those obtained from long-bone measurements. These new estimates highlight the importance of incorporating soft tissues in body mass calculations and the increasing relevance of digital reconstruction in vertebrate palaeontology.

Contender for the Thenius Award

How to kill almost all (land) life on Earth

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The end-Permian event (EPE; c. 252 million years ago) was the worst mass extinction in Earth's history. While originally identified from the marine fossil record, the impacts of the EPE on land have been relatively poorly understood and controversial. Both land plants and animals suffered unparalleled diversity losses, but plants appeared to be relatively resilient to extinction. This demands a reimagining of 'mass extinction', and an alternative metric for characterising biotic crises: biological productivity (or carbon fixation). Plants comprise >90 % of Earth's biomass today, and have been the principal biomass producers for the last several hundred million years. We therefore predicted that major and/or long-term reductions in their productivity loss would completely destabilise terrestrial food webs, even with modest extinction rates. This would have major consequences for land ecosystem function, the global carbon cycle and climate, and the evolutionary history of all life on Earth.

We employed the plant microfossil and macrofossil records – in conjunction with geochemical and sedimentary environmental proxies – to identify and measure several environmental stressors and the long-term consequences of this calamity for life on land. Moreover, we present new metrics of 'palaeoproductivity' to identify and quantify major land ecosystem disruptions in geological history, including (but not limited to) mass extinction events. Given that most mass extinctions, including the EPE, can be explained by runaway greenhouse gas emissions, we should be desperate to understand what long-term consequences this may have for our presently warming world.

Shark-References.com – the bibliographic database. Usage and latest search tools.

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Shark-References (www.shark-references.com) is an online, open-access, non-profit database which focus lies on exclusively providing information on sharks, rays, and chimaeras (Chondrichthyes). It was developed to ease literature research when preparing scientific articles, assignments, and reports. The database is a collection of scientific literature, taxonomy and its history, tooth morphology, and parasites of both extinct and extant chondrichthyans. All the above are monitored and continuously updated. In this presentation we would like to generally introduce the database and further point out latest resources and tools which only recently were added, for example, the new Advanced Search tool allowing users to search for full text in more than 30.000 research articles. The Advanced Search option works with keywords and timeframes for search refinements and results in a list of references the user may download. As this new tool notably simplifies literature research within the multi-disciplinary field of cartilaginous fishes, we expect an increase in its usage. Already a unique resource, Shark-References is the recommended search tool for the IUCN's shark specialist group and we hope to increase our reach among students, researchers and the generally interested public by adding additional resources.

Palaeoecology of the Miocene fish fauna of St. Margarethen, Austria

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The Kummer quarry in St. Margarethen, Burgenland, Austria is a konservat-lagerstätte known for its exceptionally well-preserved fossil fishes. The assemblage has been subject to taxonomic studies since the nineteenth century, yet the ecological dynamics within the vertebrate fauna remains largely underexplored. The present study addresses this gap by reconstructing the food-web of the locality, with a particular focus on actinopterygians (ray-finned fishes) and elasmobranchs (sharks, rays, and skates) to assess the ecological balance of the ecosystem. The analysis is based on the specimens housed in the Natural History Museum Vienna, along with material from a private collection. The fish community consists of bony fishes, sharks and rays occupying different trophic levels and ecological niches, reflecting a diverse community shaped by the dynamic environmental conditions during the late Badenian along the western margins of the Fertőrákos platform. Modern analogues and functional tooth morphology are used to infer feeding strategies and trophic positions of fossil taxa. Bite marks on a cetacean rib are experimentally reproduced to determine their causal agent. The results reveal a five-level trophic structure, with fishes occupying every consumer level. High nutrient availability and a diverse benthic invertebrate fauna supported a rich fish community on intermediate trophic levels, which sustained large predatory fishes and sharks. Bite marks on the cetacean rib can be attributed to the extinct tiger shark *Galeocерdo aduncus*, identifying it as an apex predator of the assemblage. Overall, the ecological structure reflects the dynamic, eutrophic conditions during the middle Badenian at the locality.

Contender for the Thenius Award

From Land to Water: Evolution of Form and Function in Aquatic Carnivores

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The shift of tetrapods from land back to water represents one of the most remarkable evolutionary transitions, offering a valuable opportunity to investigate how organisms adapt to new ecological settings. These secondarily aquatic transitions often require extensive modifications to the body plan. Yet, the degree to which different anatomical systems can evolve in concert or independently of one another (*i.e.*, mosaic evolution) remains largely unresolved. Given that developmental, functional, and phylogenetic constraints differ significantly across body regions, adaptive responses are likely distributed unevenly among systems. Aquatic carnivorans, including pinnipeds (seals, sea lions, walruses), as well as mustelids and ursids, serve as a powerful comparative model for investigating secondarily aquatic adaptations. Some lineages show substantial changes in morphology, including flipper-like limbs and streamlined bodies for efficient aquatic locomotion. At the same time, sensory systems like the inner ear and brain must adapt to the challenges of life in a three-dimensional aquatic environment. While individual anatomical structures have been studied in isolation, comprehensive comparisons across systems are rare.

Here, we implement an integrative, multi-element framework to explore how locomotory and sensory systems co-evolve during the land-to-water transition. Using CT imaging of carnivoran skulls, we reconstruct endocranial features (including the inner ear labyrinth and brain endocast) and combine these with 3D models of postcranial elements (limbs and cervical vertebrae). Using both landmark-based and landmark-free morphometric techniques, we assess evolutionary changes in shape and structure across extant and extinct taxa. Our goal is to better understand the dynamics of mosaic and integrated evolution and to explore how functional and developmental constraints influence morphological change. This approach offers new insights into how vertebrate morphology adapts to new environments, with broader implications for the study of evolutionary innovation and constraint during ecological transitions.

The Austral Antarctic Forest during the Early Eocene Climatic Optimum – biogeography, diversity and the fate of polar lineages

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The biogeographic patterns evident in the floras of the Southern Hemisphere have long fascinated naturalists. To explain these patterns, hypotheses have been proposed that invoke either vicariance through Gondwana's break-up or long-distance dispersal.

The fossil plant assemblage of the Macquarie Harbour Formation (MHF) in Tasmania, southeastern Australia, offers a unique window into this complex puzzle. Situated at subpolar palaeolatitudes (65–70° S), and dating back approximately 53–50 million years to the Early Eocene Climatic Optimum (EECO), it represents one of the oldest post-Cretaceous plant assemblages in Australia. Importantly, it predates the final break-up of Australia while Tasmania formed the last land connection to Antarctica.

We present new data from a near-polar forest, including systematics, diversity and ecophysiological adaptations to the high latitudes. Furthermore, we reveal taxon- and ecosystem-scale biogeographic patterns across the Southern Hemisphere.

We identified at least 10 conifer species (e.g., *Araucaria*, *Araucarioides*, *Retrophyllum*, *Podocarpus*), two cycads (*Bowenia*, *Pterostoma*), one fern (*Lygodium*), abundant remains of the relict umkomasialean 'seed fern' (*Komlopteris*) and several angiosperms (e.g., *Nypa*, *Ripogonum*, and Australia's oldest *Eucalyptus*).

Intriguingly, many of these taxa are extant relicts with small populations in Australasia (mostly tropical Oceania) and South America (mostly the neotropics), often confined to high-altitude and/or humid habitats. The presence of these lineages in the early Eocene assemblages of South America and Australia, as well as the Palaeocene of Antarctica, demonstrates a continuous extent of the Austral Antarctic Forest, thus favouring the vicariance hypothesis for many taxa that are today shared between these continents.

Furthermore, the assemblage contains extinct lineages, Mesozoic relicts, such as *Araucarioides* and *Komlopteris*, that appear to have had a Gondwana-wide distribution. We correlate their extinction with northward continental migration, and the rise of the Andes in South America, which led to significant aridification, changes in insolation and an increased competition with angiosperms.

Fund einer angebissenen Delfinrippe aus den mittelmiozänen Ablagerungen von St. Margarethen, Bgld.

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Für Privatsammler ist es sehr wichtig gute Kontakte zu Steinbruchbesitzern, anderen Sammlern, aber auch natürlich zu Wissenschaftlern zu haben. Nur so ist es möglich zu interessanten Funden zu kommen und zu erfahren um was es sich handelt. Diese „guten Kontakte“ ermöglichen mir als Privatsammler immer wieder den Steinbruch der Fa. Hummel in St. Margarethen zu betreten. Im Jänner 2023 hatte ich so das Glück eine Delfinrippe in den mittelmiozänen Leithakalken zu finden, die dort abgebaut werden. St. Margarethen ist eine sehr bekannte Fundstelle aus dem Badenium, in deren ca. 13–14 Mio. Jahren alten Ablagerungen, neben vielen Muscheln, auch ganze Fischfossilien, Seekuhreste, aber auch immer wieder Wal-, und Delfinknochen gefunden werden. Bei der Präparation der Rippe fielen mir, neben einer bereits vor der Fossilisierung entstandenen starken Beschädigung des Knochens, auch „Striemen“ auf, die mir bekannt vorkamen.

Bei der Jahrestagung 2021 konnte ich Ihnen bereits über eine, von einem Tigerhai angebissene Seekuh berichten, die ich 2012 in Retznei (Stmk.) fand. Durch die anschließende wissenschaftliche Bearbeitung konnte nachgewiesen werden, dass es sich bei diesem Fund um die bisher älteste Räuber-Beute Beziehung zwischen Tigerhaien und einer Seekuh handelt. Zu betrachten ist dieses Fundstück in den neu gestalteten Ausstellungsbereichen des Joanneum in Graz.

Aufgrund der sensationellen Resultate der Steirischen Seekuh, ersuchte ich erneut um fachliche Unterstützung für die neue Delfinrippe aus St. Margarethen, die ebenfalls auffällige Bissspuren zeigt. Erste Untersuchungen des Fundstückes gaben nun Gewissheit – auch hier waren Tigerhaie die Verursacher der markanten Beißmuster. Sehr sicher sind auf diesem Fundstück sogar noch weitere Fraßspuren von anderen Haien zu erkennen, die aber nicht eindeutig zugeordnet werden können.

Addressing ambiguities in historic foraminifera type collections through digitization

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Foraminiferal taxonomy dates back into the 18th century, even though they were not termed as such before d'Orbigny in 1826. Various taxa were described during the 19th century and many are still valid today. For modern taxonomic studies, the reference to the originally described type specimens is as important as ever, especially if research data are later re-used. Thanks to the efforts of projects like the World Foraminifera Database or Mikrotax, original citations, descriptions, or even figures became widely available and through initiatives like the Biodiversity Heritage Library, historic publications became accessible, which has already increased the data quality significantly. Yet, a few problems remain.

Modern imaging methods like SEM or digital microscopy allow the depiction of type specimens with all relevant details “as they are”. Historic types, on the other hand, are generally figured as drawings. While many of those are remarkably accurate, in some cases certain ambiguities remain. The concept of describing a new species from one representative specimen (the holotype) was only developed at the end of the 19th century, leading to the wide use of type series. Today, the depiction of the holotype together with a set of paratypes is commonly used to highlight morphological variations between specimens. In the 19th century, however, it was not unusual to produce a single “conventionalized” drawing, which could actually include several variations. This means that sometimes the published figure can not undoubtedly be associated with a specific individual from the type series.

Such conventionalization in type figures has been noted before and some examples from the historic foraminifera collection of the Natural History Museum Vienna are presented here. High resolution photographs were produced of specimens of the type series and compared with the original drawings. It was possible to detect several cases of type figures being conventionalized or potential composites of multiple individuals. Some of these were already discussed in revisions (including the designation of a lectotype), but others still remain unresolved and will be addressed in the future through continuous digitization of the collection in order to increase the overall quality of taxonomic reference data.

„Über die Bande“ – wie Österreichs Paläontologie durch koloniale Herrschaftssysteme profitierte

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Die Diskussion über koloniale Aneignungspraktiken hat in Österreich verspätet begonnen, was unter anderem daran liegt, dass die Habsburgermonarchie im Vergleich zu anderen europäischen Staaten wie Großbritannien, Frankreich oder Deutschland keine „klassische“ Kolonialmacht war. Trotzdem hat Österreich im 19. und beginnenden 20. Jahrhundert vielfältige Kontakte zu Gebieten unter kolonialer Herrschaft geknüpft, gepflogen und genutzt, was sich auch in den Sammlungen des Naturhistorischen Museums Wien (NHMW) widerspiegelt.

Die Sammlung der Geologisch-Paläontologischen Abteilung des NHMW umfasst etwa 5,7 Millionen Objekte aus 158 Ländern. Für den Zeitraum von 1807 bis 1918 verzeichnen die Inventarbücher der Abteilung 268.755 registrierte Objekte. Hauptaugenmerk des hier vorgestellten und vom BMWKMS geförderten Projektes ist die Rolle von kolonialen Herrschaftspraktiken bei der Sammlungsakquise für die Geologisch-Paläontologische Abteilung, zum einen innerhalb der Grenzen der Habsburgermonarchie („Binnenkolonialismus“ am Beispiel von Bosnien), zum anderen im Hinblick auf wissenschaftliche und wirtschaftliche Kontakte mit Kolonialmächten, die zum Erwerb von Objekten aus verschiedenen Gebieten in Afrika und Asien führten. Anhand von ausgewählten Fallbeispielen sollen die Verbindungen zwischen den am NHMW agierenden Personen und den jeweiligen Partnern in kolonialen Herrschaftssystemen nachvollzogen werden.

Generell zielt das Projekt darauf, durch interdisziplinäre Kooperation die Perspektiven und Methoden der Historiker*innen mit der wissenschaftlichen Praxis und dem Wissen der Erdwissenschaftler*innen zu kombinieren und so auf gesicherter Quellenbasis „best practice“-Beispiele für zukünftige Diskussionen zu liefern.

Die außergewöhnliche Fossiliensammlung von Herbert Schaffer aus Schloss Würting: Konservierung, Digitalisierung und Bestimmung von Fossilien aus Europa und Nordafrika

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Die Fossiliensammlung von Herbert Schaffer, erworben 2024 durch die Oberösterreichische Landes-Kultur GmbH (OÖLKG), stellt die größte private paläontologische Sammlung Österreichs dar. Insgesamt konnten rund 160 Tonnen Fossilmaterials aus Schloss Würting geborgen werden. Diese außergewöhnliche Sammlung ist nicht nur aufgrund ihres Umfangs und ihrer ungewöhnlichen Geschichte einzigartig, sondern auch deshalb, weil der Großteil der Objekte bislang wissenschaftlich unerschlossen und unbeschrieben ist.

Zu den herausragenden Fundstücken zählen unter anderem Fossilien aus der Fundstelle Traun-Pucking, darunter Überreste mehrerer Individuen von Odontoceti (Zahnwale). In den oberen Stockwerken von Schloss Würting in Offenhausen wurden mehr als 5.000 Kisten mit fossilen Fischen aus St. Margarethen im Burgenland geborgen, hauptsächlich Syngnathidae, Labridae und andere Percomorphaceae. In einem der Säle des zweiten Obergeschosses war zudem ein unpräpariertes jurassisches Krokodil aus den Tongruben bei Peterborough (UK) gelagert, ebenso wie ein rund 3,5 Meter langer Ichthyosaurus aus der weltberühmten Fossilagerstätte von Holzmaden (Deutschland).

Darüber hinaus umfasst die Sammlung große Mengen fossilen Materials aus weiteren bedeutenden Fundorten, darunter: Eggenburg (Niederösterreich), Nefgraben bei Rußbach (Oberösterreich), Bad Adelholzen (Deutschland), Schlaifhausen (Deutschland) sowie das Wiestal bei Hallein (Salzburg). Eine vollständige Liste aller dokumentierten Fundstellen kann auf Anfrage bei den Verfassern eingesehen werden.

Aktuell laufen umfangreiche Maßnahmen zur Konservierung, Katalogisierung und Digitalisierung der Sammlung, um deren Zugänglichkeit für wissenschaftliche Untersuchungen und die Öffentlichkeit langfristig zu sichern. Diese Initiative würdigt nicht nur das Vermächtnis von Herbert Schaffer, sondern soll auch eine Grundlage für interdisziplinäre Forschung in Paläontologie und Paläoökologie am Biodiversitätsforschungszentrum Linz der OÖLKG schaffen. Dieser Beitrag zielt darauf ab, einen Überblick über die Sammlung zu geben, auf ihr wissenschaftliches Potenzial aufmerksam zu machen sowie zur Mitarbeit an der wissenschaftlichen Erschließung dieser außergewöhnlichen paläontologischen Schatzkammer einzuladen.

Notizen

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Titelbild (Rückseite): Lebendrekonstruktion von *Struthiosaurus austriacus* Fabrizio De Rossi

